REMARKS

I. STATUS OF THE CLAIMS

Claims 1-4, 6-20, 22, 23, and 25-31 are pending in the present application. In the final Office Action mailed August 4, 2005, claims 1-4, 6-20, 22, 23, and 25-31 were rejected. Reconsideration is respectfully requested in view of the following remarks.

II. CLAIM REJECTIONS UNDER 35 U.S.C. §102(e)

Claims 1, 4, 7, 8 and 20 are rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,073,560 to *Stone*. This rejection is respectfully **traversed**.

Stone is directed generally to a sabot for holding a sub-caliber projectile (Abstract). The sabot includes a plurality of petals that extend from the back section towards the front section of the sabot (col. 3, lines 11-12). The petals form an internal cavity for holding a projectile (col. 3, lines 12-13).

According to the Office Action,

> *Stone* discloses a sabot comprising a compression section (214, 212) defining a payload receiving chamber (240) at a forward end of the sabot for receiving a slug (50) therein, the compression section including a plurality of fins (220, 221, 223) defined by a combination of alternating ridges on an interior and an exterior surface thereof; and a solid section (216) extending rearwardly from the compression section; wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume change.

(Office Action, p. 2, para. 2).

Applicant disagrees with this assessment. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ.2d 1051, 1053 (Fed. Cir. 1987). *Stone* does not teach or suggest each and every element of Applicant's claimed invention.

First, *Stone* does not teach or suggest a sabot including a compression section as set forth in claims 1 and 8. According to *Stone*,

> It will be readily understood that the sabot 10 and the projectile contained therein will be subjected to a spinning rotation as they exit the rifled barrel. This rotation will exert a centrifugal force on each petal 20... Because each petal 20 is attached to back section 16, *the resultant movement of each petal responsive to the centrifugal force will be as illustrated in FIG. 5.* In that figure, each petal 20 has rotated to an open position. *Effectively, each petal 20 is subjected to a moment arm action created about the point where each petal is attached to the back section 16.* The centrifugal force acting on the front section 12 and concentrated at the locations of the high mass portions serves to promote the release of projectile 50 from sabot 10.

(col. 4, line 20-37) (emphasis added).

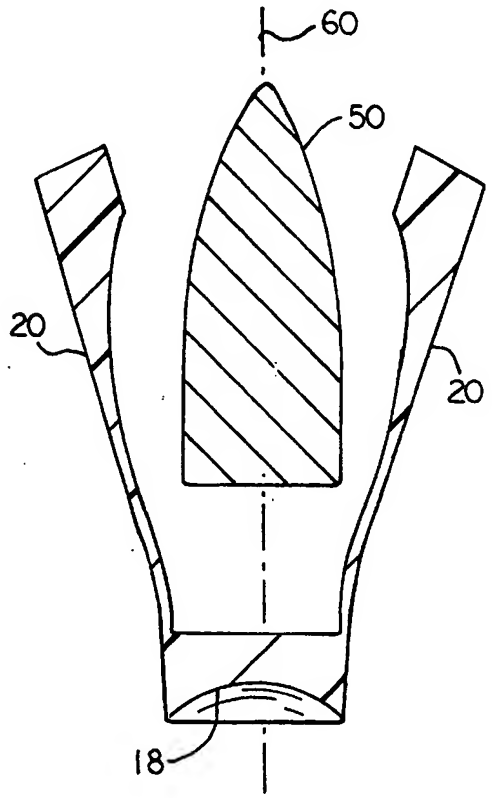

FIG. 5

Thus, the sabot of *Stone* does not compress in the manner of the sabot as claimed in claim 1. Rather, the petals open in a direction *away from* the sabot to release the projectile.

Second, the sabot of *Stone* does not include a compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume change. Furthermore, the sabot of *Stone* is not a lead attached sabot and does not remain substantially intact upon firing. In sharp contrast to the claimed construction, the sabot of *Stone* is designed to facilitate separation of the sabot and projectile. According to *Stone*,

> As can be seen in FIG. 5, the petals 20 open quickly to create an *exit path* for projectile 50. Simultaneously, sabot 10 loses its initial relatively aerodynamic shape and takes on a shape which creates a great deal of drag. The speed of sabot 10 relative to projectile 50 decreases rapidly thus *promoting separation of the sabot 10 from projectile 50.*

(col. 4, lines 37-44) (emphasis added).

For at least these reasons, *Stone* does not teach or suggest each and every element of Applicant's claimed invention as set forth in claims 1 and 8. Thus, *Stone* is insufficient to support a rejection of claims 1 and 8 under 35 U.S.C. §102(e). Since claims 4, 7, and 20 depend either directly or indirectly claims 1 or 8 and contain additional limitations, *Stone* is also insufficient to support a rejection of claims 4, 7, and 20 under 35 U.S.C. §102(e). As such, it is submitted that this rejection is improper and should be withdrawn.

III. CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference or combination of references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); MPEP §2142. It is respectfully submitted that the Office Action has failed to set forth a

prima facie case to support a rejection of the currently pending claims under 35 U.S.C. §103(a), as will be discussed below.

In the Office Action, all of the pending claims were rejected over various combinations of *Stone* with *Gualandi*, *Hoffman*, *Dippold*, and *Stevens*. These rejections are respectfully **traversed**.

In particular, claims 2 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 4,939,997 to *Hoffman*. Claims 3, 9, 11-14, and 27-30 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 6,481,356 to *Gualandi*. Claims 6, 10, 15, 16, and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.* Claims 6, 10, 15, 16 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,263,418 to *Dippold et al.* Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of U.S. Patent No. 5,361,701 to *Stevens*. Claims 22, 23, and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and of *Hoffman*. Claim 25 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and of *Hoffman*, and further in view of *Dippold*. Claim 31 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Stone* in view of *Gualandi* and further in view of *Dippold*.

Without addressing whether there is a motivation to combine reference teachings or a reasonable expectation of success with respect to each rejection, it is submitted that the combination of *Stone* with any of the cited references does not teach or suggest all elements of Applicant's invention as set forth in claims 1-4, 6-20, 22, 23, and 25-31. As such, none of the references, alone or in combination, are sufficient to support a rejection under 35 U.S.C. §103(a).

A. *Stone* does not teach or suggest various aspects of Applicant's claimed invention as set forth in claims 1-4, 6-20, 22, 23, and 25-31.

In particular, with respect to claim 1, *Stone* does not teach, *inter alia*, a sabot comprising a compression section defining a payload receiving chamber at a forward end of

the sabot for receiving a slug therein, the compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, and a solid section extending rearwardly from the compression section, wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume change.

With respect to claim 8, *Stone* does not teach, *inter alia*, a firearm round comprisinga sabot including a compression section defining a payload receiving chamber therein and a solid section connected to the compression section, said compression section including a plurality of alternating ridges on an interior and an exterior surface thereof, and a slug received and fitted within the payload receiving chamber of the sabot, wherein the compression section is adapted to at least partially collapse upon firing to produce a volume change.

With respect to claim 22, *Stone* does not teach, *inter alia*, a sabot comprising a compression section defining a payload receiving chamber therein, said compression section including a plurality of fins defined by a combination of alternating internal and external ridges on an interior surface and exterior surface thereof, a post integrally formed within the payload receiving chamber, a locking ring residing within the payload receiving chamber, and a solid section connected to the compression section, wherein said compression section is adapted to at least partially collapse upon firing, while remaining substantially intact, to produce a volume change.

B. None of the cited references, alone or in combination, supplement the deficiencies of *Stone*.

1. *Hoffman*

Hoffman is directed to an article of ammunition equipped with a propulsion mechanism or sabot that is configured as a tubular projectile into which a projectile core is inserted (col. 2, lines 36-39). Like *Stone*, *Hoffman* does not teach or suggest a compression section including a plurality of fins defined by a combination of alternating ridges on an interior and an exterior surface thereof, wherein the compression section is adapted to at least partially collapse upon firing while remaining substantially intact to produce a volume

change. Indeed, the sabot of *Hoffman* does not include any semblance of a compression section. Thus, the combination of *Hoffman* with *Stone* still fails to teach each and every element of the claimed invention.

2. *Gualandi*

Gualandi is directed to a body that axially supports a bullet on its end by a coaxial clutch on a column that extends into a seat for contact containment. The cylindrical seat is formed by two half-parts that are separated by longitudinal cuts. During firing, the *two half-parts separate* and are carried with the bullet, thereby avoiding frictional contact between the bullet and the inside wall of a barrel (col. 1, lines 10-23).

Like *Stone*, *Gualandi* does not teach or suggest a compression section as claimed in claims 1, 8, 22, and their associated dependent claims. Further, in sharp contrast to the present invention, the sabot of *Gualandi* is designed to separate upon firing, rather than remain substantially intact. According to *Gualandi*,

> [i]n order to provide for resistance to the deflagration crash, the half parts of the containment seat 10 are provided with outside curved parallel reliefs 15 *which permit the separation of the two half parts 10A and 10B.*

(col. 4, lines 45-48) (emphasis added). Thus, unlike the present invention, *Gualandi* teaches a containment seat that *separates*, not *compresses*, upon firing.

Additionally, *Gualandi* does not teach or suggest a sabot including a compression section including a plurality of fins defined by a combination of alternating internal and external ridges. Instead, *Gualandi* merely provides that "[e]ach of the half parts of the containment seat are provided on the *outer surface* thereof with curved reliefs..." (col. 2, lines 34, 35) (emphasis added). There is no teaching or suggestion in *Gualandi* that the curved reliefs permit the containment seat to *compress* upon firing, as with the alternating internal and external ridges of the present invention, and indeed, *Gualandi* appears to teach away from the use of a compression section by instead providing for the separation of the half parts after firing.

3. *Dippold*

Dippold is directed to a sabot bullet having a constricted waist. The sabot bullet has a tapered axial recess in the front end having a flat tapered side walls (col. 1, lines 48-52). *Dippold* does not teach or suggest a sabot or firearm round comprising a compression section including a plurality of fins defined by a combination of alternating internal and external ridges.

4. *Stevens*

Stevens is directed to a shotgun tracer round for use in a shotgun barrel. *Stevens* does not teach or suggest a sabot or firearm round comprising a compression section including a plurality of fins defined by a combination of alternating internal and external ridges.

C. A *prima facie* case under 35 U.S.C. §103(a) has not been made.

As stated previously, *Stone* does not teach or suggest all elements of Applicant's claimed invention as set forth in claims 1-4, 6-20, 22, 23, and 25-31. None of the cited references, *Hoffman*, *Gualandi*, *Dippold*, or *Stevens*, cure the deficiencies of *Stone*. Given that none of the references, alone or in combination, teach or suggest all elements of Applicant's claimed invention, it is respectfully submitted that these references are insufficient to support a rejection of claims 1-4, 6-20, 22, 23, and 25-31 under 35 U.S.C. §103(a).

CONCLUSION

The foregoing is submitted as a full and complete response to the final Office Action mailed August 4, 2005, and is believed to place all claims in the application in condition for allowance. Such action is courteously solicited.

If the Examiner believes that there are any issues that can be resolved by telephone conference, or if there are any informalities that may be addressed by an Examiner's amendment, please contact the undersigned at (404) 879-2437.

Respectfully submitted,

Dana E. Stano

Date: October 10, 2005

Dana E. Stano
Reg. No. 50,750

Womble Carlyle Sandridge & Rice, PLLC
P.O. Box 7037
Atlanta, GA 30357-0037
(404) 879-2437 (Telephone)
(404) 879-2937 (Facsimile)
Docket No.: R087 1270.1 (27584.0274.9)